



SUMMARY - MARITIME COMMERCE SECTOR WORKING SESSIONS

Northeast Regional Ocean Council (NROC)

December 2012

1. Executive Summary

1.1. Overview

In November and December 2012, the Northeast Regional Ocean Council (NROC) organized a series of five working sessions for members of the maritime commerce (ports and shipping) sector in New England as part of the regional ocean planning effort in the region. These working sessions were held in New Haven, CT, Boston, MA, Portland, ME, Portsmouth, NH, and North Kingstown, RI and were attended by a total of 49 participants. The purpose of the working sessions was to learn more about the key issues being faced by the maritime commerce sector in New England, anticipated changes in coming years, and the potential role of regional ocean planning to address issues and opportunities. In addition to the participants, NROC members attended to participate in the discussions.

The working sessions had identical agendas focused on three main topics:

1. potential changes to ports and shipping
2. interactions with other ocean activities and marine resources
3. maritime commerce sector data

This meeting summary synthesizes comments made and questions raised by those who participated in the working sessions; it should be clarified that not all New England Ports or shipping companies were represented. The meeting summary captures those themes that were voiced most frequently or most strongly. It was written by the facilitation team from the Consensus Building Institute and Kearns & West.

NROC does not endorse the views in this summary document. The summary is intended to capture key themes and ideas expressed during the sharing of participants' ideas, questions, suggestions, and comments. There are times when these comments contradict one another or are stated as a certainty but may not be fully accurate. The summary strives to capture what participants said, and their points and perspectives have not been fact checked. The statements in the document summarize the perspectives of the participants, not the views of NROC or the authors of this document. In addition, in some cases, it was hard to know whether a statement applied to all of New England or to a particular

state or to a much smaller area like a particular port; this summary tries to be clear about this when possible.

1.2. Themes About Anticipated Changes to Ports and Shipping

- The expansion of the Panama Canal could mean larger, Post-Panamax vessels traveling to those ports that can accommodate them and the possibility of increased feeder services transporting goods from these vessels to other New England Ports. There is a fair amount of uncertainty regarding exactly how marine transportation patterns may change, however, given the complexities of shipping and a recognition that economic factors influencing individual ports may vary across the region (such as proximity of customers, sources and destinations for goods, etc.). If there is a significant uptick in shipping traffic at certain ports, this could result in substantial upgrades in infrastructure (e.g., if deeper dredging is required to serve deeper-draft vessels, additional shore-side infrastructure, etc.).
- Short sea shipping (defined as services that call between ports in the region or along the Atlantic Seaboard) is currently uncommon within the region with the exception of fuel shipments. Participants were uncertain whether short sea shipping will increase over the coming years. This uncertainty is due in part to structural constraints, such as limitations on port-to-port shipping imposed by the Jones Act on non-US vessels, but it will also be informed by a variety of other factors such as fuel costs, the cost of shipping by truck (given the competition between land- and sea-based transportation), costs associated with emissions controls, the effects of Post-Panamax vessels coming into the region, and the general state of the economy. Currently, margins are very tight for companies pursuing short sea shipping.
- Port infrastructure in New England is in need of significant upgrades due to age and sedimentation decreasing the depth of channels and berths. If these upgrades are not made, New England ports may lose business to Canadian ports and ports south of New England that have updated port infrastructure.
- The cruise ship industry is becoming increasingly important for certain New England ports, such as Portland, ME and Boston, MA, with increases in vessels and passengers comprising an increasingly important niche. Working with the cruise ship industry requires long term planning to provide scheduling assurances.
- The economic viability of maritime commerce in New England will continue to depend on the sector's ability to remain competitive and receive and deliver goods in a cost effective and timely way.

1.3. Themes About Interactions with Other Ocean Activities and Marine Resources

- Participants agreed that offshore energy development needs to take maritime commerce interests into account, such as the location of shipping lanes or the potential for offshore energy development to interfere with radar systems or cause safety concerns. There was a general view that regional ocean planning could play a helpful role here. There was also some concern that the Bureau of Ocean Energy Management (BOEM) may move ahead with siting of offshore wind facilities prior to the completion of New England's regional ocean plan.
- Participants viewed marine mammal interactions with shipping vessels as an ongoing important issue for the sector. Participants had varying views over the effectiveness of the current seasonal- and spatial-based management approach of the North Atlantic right whale seasonal

and dynamic management areas; several criticized the seasonal regulations and speed restrictions as being too inflexible and costly, and expressed support for a dynamic management system, while others expressed concern about the effectiveness of dynamic management's voluntary speed restrictions.

- Shipping companies are wary of emission control regulations that are costly to comply with and subject to future change. Shipping companies are deterred by these regulations (which may result in enhanced fuel costs and/or upgrades to vessel emissions controls) and worried that they will significantly cut into profitability, especially for vessels and companies working primarily within US waters (short sea shippers).
- Disposal of dredge materials is a challenge for ports and an issue that oftentimes crosses state boundaries. Many participants viewed it as an issue that regional ocean planning might help address.

1.4. Themes About Maritime Commerce Sector Data

- Participants demonstrated broad support for having access to spatial information showing the location of different ocean uses (e.g., shipping lanes, wind energy development, aquaculture, marine mammal protection areas) and were generally appreciative of the information available in the Northeast Ocean Data Portal.
- Participants agreed that Automatic Identification Systems (AIS) data was a good source for characterizing shipping activity and gave specific examples of ways in which this information can be used to indicate the patterns of different types of vessels and cargoes. Suggestions included breakdowns by vessel type (tug/tow, tanker, cargo, passenger, etc.) and draft. Participants also thought it would be a good idea to look at data across years and seasons to discern trends in shipping by specific products—tanker patterns will be different than bulk cargo in some cases, for example, which will also be different in turn from cruise ship. They said seasonal patterns could be influenced by product, environmental factors, or by vessel purpose.
- Participants also cautioned that there are ways in which AIS data can be inaccurate and incomplete. For example, AIS data may not reliably tell what type of vessel is being tracked, it doesn't provide the context in which the vessel was navigating, and not all vessels are required to report AIS data.
- Participants generated a list of maritime operation areas they would like to see included in any data collection effort. These included: pilot boarding areas, unofficial routes preferred during inclement weather, anchorage areas, safety/security zones, hazardous areas, dredging disposal sites, and aquaculture maps, among others.

2. Maritime Commerce Sector Working Session Introduction

2.1. Project and Process Overview

NROC is a state and federal partnership that facilitates the New England states, federal agencies, regional organizations, and other interested groups in addressing ocean and coastal issues that benefit from a regional response. Formed in 2005, NROC's mission is to provide a voluntary forum for New England states and federal partners to coordinate and collaborate on regional approaches to support balanced uses and conservation of the Northeast region's ocean and coastal resources. One of NROC's

core focal areas is regional ocean planning, and several supporting projects are underway. For more on NROC, see: <http://northeastoceancouncil.org/>

In 2012, as part of its ocean planning work plan, NROC set out to build stronger connections with key ocean users to begin discussing potential regional ocean planning topics and develop useful data products. A core component of this work involved reaching out to marine industries (including the aquaculture, maritime commerce, and energy sectors) as well as to the commercial fishing community, recreational boaters, and the natural resource community. In November and December 2012, NROC convened a suite of working sessions with representatives from the three marine industry sectors. This summary captures key outcomes from the maritime commerce working sessions.

The maritime commerce working sessions were preceded by several months of preparation and initial outreach to the sector. To support these outreach efforts, NROC hired a facilitation team composed of staff from the Consensus Building Institute and Kearns & West (neutral facilitation firms with a focus on natural resources and public policy). Over the summer of 2012, the facilitation team reached out to key leaders from the maritime commerce sector. The facilitation team conducted confidential phone interviews, sometimes attended by NROC staff, to better understand the state of the industry, key industry participants, and to learn how best to engage the sector. In parallel with these interviews, the facilitation team sent out an online survey to a larger group of representatives from within the industry. A total of 17 representatives from the maritime commerce sector participated in either the interview or the online survey. Finally, NROC hired a maritime commerce expert to prepare a white paper summarizing the state of the industry in New England today. The maritime commerce white paper can be found at northeastoceancouncil.org. The interview and survey results and white papers helped identify the key issues that were discussed at the maritime commerce working sessions. The locations for the maritime commerce working sessions were identified with input from the interviews as well as advice from the white paper author and NROC members. The intent was to locate the events strategically to capture the geographic differences in interests and issues and to minimize travel time for attendees.

Five working sessions were held for members of the maritime commerce sector in New England. These working sessions were held in New Haven, CT, Boston, MA, Portland, ME, Portsmouth, NH, and North Kingstown, RI and were attended by a total of 50 participants. The sessions ran from 10:00 a.m. to 3:30 p.m. Working session participants came from local and regional port authorities and associations, the shipping and cruise line industries, marine engineering firms, pilotage service providers, nonprofits, the National Oceanic and Atmospheric Administration (NOAA), US Coast Guard (USCG), state offices of Coastal Zone Management (CZM) and state and federal Departments of Transportation, including some NROC members. A list of working session participants is in Appendix 1, and a copy of the working session agenda is in Appendix 2. Not all New England ports or shipping companies were represented.

The stated objectives of the working sessions were to:

- Provide an update on recent regional ocean planning efforts in New England.
- Increase clarity and understanding around key issues facing the maritime commerce sector.
- Explore the role that regional ocean planning can play in addressing these issues, and identify specific next steps to doing so.
- Discuss the current status of data characterizing maritime commerce in New England, and explore the role that regional ocean planning can play in improving and expanding this information base.

Summary - NROC Maritime Commerce Sector Working Sessions, December 2012

Discussions from all five of the maritime commerce working sessions are synthesized in this summary, as there were many similarities across the working sessions. This summary will be shared with everyone who attended or was invited to the working sessions, and with members of NROC and the newly formed New England Regional Planning Body (RPB). It will also be posted on the NROC website.

2.2. NROC Plans for 2013

In 2013, NROC plans to continue to reach out to the maritime commerce sector through ongoing communications with sector leaders and participants, and further development of the Northeast Data Portal (see the last section of this summary for more on the data portal). As part of the overall regional ocean planning process, there will be additional opportunities to specifically engage the maritime commerce industry, as well as the energy industry, aquaculture and commercial fishing industries, recreational boating, and natural resource conservation organizations in similar processes in 2013. Ultimately, the foundational information (maps, data sets, and white papers) created by NROC during this process will feed into regional ocean planning processes that will be implemented by the Regional Planning Body.

2.3. Context: Introduction to NROC and Overview of the Maritime Commerce Sector

The first part of each working session was a brief overview of regional ocean planning activities and of what the Project Team learned during the interviews and surveys of the sector, to frame the discussion and explain the source of the issues being addressed. Importantly, participants used this discussion to clarify their understanding of NROC and regional ocean planning.

The maritime commerce sector was introduced as a highly competitive sector where companies operate just above the profit margin to attract and maintain clients who demand that products arrive at their final destination on a tight schedule. Navigating the sometimes-unforgiving ocean conditions, maritime shipping companies operating in New England compete with overland-based transportation companies moving goods along the Interstate-95 corridor. To keep maritime shipping costs as low as possible, vessels transport goods along the shortest distance, least-cost path. Even a minor change to a navigation route could increase the cost of shipping. Considering this context, working session participants discussed current and future trends that could impact the maritime industry and the potential role ocean planning could play in addressing the interests and concerns of the maritime industry. Participants also discussed the role regional ocean planning could play in improving and expanding an information base which the maritime industry could utilize to improve their operations.

2.4. Meeting Summary

This meeting summary, drafted by the facilitation team¹, is organized into the following main sections:

- Section 3: Anticipated changes to ports and shipping

- Section 4: Interactions with other ocean activities and marine resources

- Section 5: Maritime commerce sector data

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¹ The facilitation team that worked on maritime commerce sector engagement and these working sessions, from the Consensus Building Institute and Kearns & West, included Eric Poncelet, Ona Ferguson, Eric Roberts, and Sara Cohen.

themes and ideas expressed during the sharing of participants' ideas, questions, suggestions, and comments. There are times when these comments contradict one another or are stated as a certainty but may not be fully accurate. The summary strives to capture what participants said, and their points and perspectives have not been fact checked. The statements in the document summarize the perspectives of the participants, not the views of NROC or the authors of this document. In addition, in some cases, it was hard to know whether a statement applied to all of New England or to a particular state or to a much smaller area like a particular port; this summary tries to be clear about this when possible.

3. Anticipated Changes to Ports and Shipping

3.1. Future Trends

Working session participants were asked what trends they anticipate in the near and long-term future for maritime commerce in New England, and what they view as the key issues and potential changes to ports and shipping that should be considered from an ocean planning context. Participants identified the following issues and trends:

- *Panama Canal expansion could have significant regional impacts* – The combination of high cross-country shipping costs and the expansion of the Panama Canal could bring more and larger Post-Panamax vessels to the heavily populated eastern seaboard, possibly including the ports of New England. These vessels will likely frequent ports with adequate depth, approaches, and shore-side infrastructure. It is expected that some ports, such as the Port of Boston and the Port of New York/New Jersey, will undertake dredging projects and, if possible, update port infrastructure from the 1940s and 1950s to accommodate the Post-Panamax container vessels as they approach and dock. Many New England ports are serving Panamax vessels with increasing frequency and anticipate ensuring necessary infrastructure (berths and channels at suitable depths, port-side infrastructure and connections to rail/truck routes, etc.) to continue to do so, as well as feeder services transporting goods from the Post-Panamax vessels calling at the ports of Boston and New York/New Jersey. There is a fair amount of uncertainty regarding exactly how marine transportation patterns may change, however, given the complexities of shipping and a recognition that economic factors influencing individual ports may vary across the region (such as proximity of customers, sources and destinations for goods, etc.) If there is a significant uptick in shipping traffic at certain ports, this could result in substantial upgrades in infrastructure (e.g., if deeper dredging is required to serve deeper-draft vessels).
- *New business opportunities from short sea shipping, the Marine Highway System, and transshipment* – Many New England Ports anticipate serving an increasing number of feeder ships moving goods coastwise from the ports serving the larger Post-Panamax vessels. However, citing Jones Act constraints, participants remained skeptical that short sea shipping and transshipping services could be sustained without either federal grant funding or a dedicated anchor tenant.

For example, participants in Portland said foreign vessels previously transported goods between Halifax, Portland and Boston, but these services were suspended because the volume of goods shipped between the ports was not profitable. In Portsmouth, participants said previous transshipment services operated reliably either due to grant funding which enabled the service

to remain profitable or due to an established anchor tenant that consistently visited the port on a weekly basis, which attracted other businesses that relied on the anchor tenant's predictable shipping schedules to transport goods. But transshipment services ceased when grant funding was depleted and the anchor tenant stopped calling on the port. If another anchor tenant were identified in the future and predictable schedules are reestablished, Portsmouth could regularly serve container vessels in the future.

In most cases, the unloading and reloading of container cargo is expected to remain cost prohibitive for transshipping and, furthermore, there are insufficient numbers of freight and manufacturing businesses to support transshipment. However, transshipping of bulk cargo could increase in the future at the Port of New York/New Jersey or the Port of Boston, which have better access to railways than other ports.

- *Declining utility of port infrastructure and the changing face of New England Port* – Across New England, a trend toward continued deterioration of port infrastructure, most of which dates from the 1940s and 50s, may cause some ports to lose business to Canadian ports or US ports further south that have updated port infrastructure. As large shipping vessel traffic decreases at certain ports and the average vessel size becomes smaller and more focused on recreation, some of these ports are serving as marinas more than as full ports. Connecticut working session participants reported this trend occurring at Bridgeport and to some degree in New Haven. Port operators experiencing this trend also noted the concurrent shift from industrial scale port businesses and land uses to more retail and recreational uses. This shift, and the infrequency of large vessel traffic, challenges a port's ability to fulfill the Army Corps of Engineering criteria for dredging projects, thus constraining a port's ability to undertake the large scale dredging projects required to continue serving large vessel traffic. It also makes it difficult to retain enough shore side property to support future port infrastructure development. If waterfronts are redeveloped in a way that does not permit tug and barge traffic, ports will not be able to accommodate short sea shipping opportunities.
- *Dredging harbors, berths, and channels will be critical for maintaining a port's relevancy* – Working session participants across New England described the need for many ports to undertake dredging operations to either maintain current operations or to attract new business. Nearly all participants cited a lack of funding, the difficulty of obtaining permits, and the difficulty of locating a site to dispose of dredge materials as the primary impediments to conducting dredging operations.
- *Increasing importance of cruise ship industry*. Participants, especially in the ports of Portland and Boston, identified the cruise ship industry, along with the vessels and passengers that it brings, as an increasingly important niche. Participants generally anticipated that the cruise ship industry will continue to grow in New England over the coming years. However, they noted that working with the cruise ship industry requires long-term planning and ports to provide scheduling assurances. They noted that cruise lines maintain strict schedules, which are established approximately 1.5 to 2 years in advance, to ensure their passengers arrive in ports on time for prearranged land based activities. If arrival is delayed, prearranged activities are cancelled and the cruise line loses money. Typically, a cruise line will test-run a port three or four times in one summer and, if all goes well, it will schedule multiple visit commitments three years later.
- *Economic conditions strongly impact ports and stimulate competition between them* – The maritime commerce industry relies on the shortest, cheapest route to reduce the cost of

transporting goods from one location to another. This is consistent across all types of goods transported, whether shipped by barge, tanker or container vessel. If routes are impeded, the vessel will burn more fuel (waiting or circumventing the impediment) and shipment costs increase. Therefore, working session participants said it is imperative that already established shipping routes be maintained.

As an example, in Portsmouth, participants described how the volatile bulk goods markets (some of which are dependent on weather conditions) and changing energy sources impact the quantity of vessel traffic. They noted that shipments of road salt, heating oil, and kerosene to Portsmouth were reduced by 20% when the region experienced mild winter weather in 2011. If the price of natural gas remains low, coal fired power plants in Merrimack and Lowell will not receive shipments of coal until coal prices become competitive with natural gas prices, and this may reduce vessel traffic in Portsmouth.

- *Ports could become staging areas for offshore renewable energy development projects* – Depending on where offshore renewable energy projects are sited and developed, some ports may find new business serving as the staging area for construction, development, and long term maintenance of renewable energy infrastructure. This is true for ports such as New Bedford, MA and Davisville, RI.

Location-specific anticipated trends

Participants in the many of the meetings discussed the trends and issues described above. In addition, the following subjects were raised primarily at one working session:

In New Haven, participants discussed the need for the state of Connecticut to establish a statewide port authority, though they were not sure when or if this might happen.

In North Kingstown, people discussed climate change, coal exports, and regional freight plans. They said:

- *Climate change could cause a variety of changes to the maritime industry* - Although much uncertainty remains, polar routes opened by melting ice could facilitate the transportation of goods to the New England region via pathways previously unavailable. The type of ships that can utilize the polar routes will depend on the type of cargo they transport; the focus would initially be on bulk cargo with container vessels being the last to adopt new polar shipping routes. More intense storms could also disrupt transportation on the Interstate-95 corridor, which might cause goods to be shipped via ocean. In the long-term, sea level rise could impact New England ports, causing the ports to adapt or replace seaside infrastructure. Climate change might also shift the habitat ranges of some fish species or marine mammals including the Right whale.
- *Coal exports could increase* – Although transporting coal from the Midwest is becoming increasingly difficult, coal could be shipped by rail to New England for export to other countries. This trend may be driven by increasing production of relatively low cost natural gas in the US and the corresponding reduction in the use of coal for electricity generation in this country.
- *Regional freight plans will influence future shipping routes* – The federal government has asked the states to develop regional freight plans. Participants believe that joint planning between overland transportation and maritime transportation representatives would be useful, since construction of new terminals and decisions about highways will ultimately drive where the freight goes.

In Portland, participants also discussed how fuel oil vessels traffic will likely continue to play a key role for the port. Portland is the second largest port in the United States in terms of the volume of fuel coming into the Port on large, deep draft oil tankers. Portland does not anticipate liquefying natural gas for export, receiving shipments of LNG, or accepting shipments of tar sands oil for export.

Participants in Portsmouth talked of a decreasing awareness of a port's impact on the local economy. Participants said the port's role as an economic engine stimulating the local economy is often unnoticed by the public, and that this lack of awareness challenges the port's ability to obtain funding for infrastructure improvements.

In Boston, the discussion also touched on offshore fuel bunkering. Participants suggested that offshore fuel bunkering locations could be developed near the Ports of Portland and Jamestown. These sites would enable large vessels to refuel without coming into the ports.

3.2. Economic Analysis Needs Associated with Anticipated Sector Trends

Working session participants were asked whether the Atlantic Coast Port Access Route Study (ACPARS) and other efforts looking at historical spatial data are sufficient for spatial representation considering the anticipated trends for the sectors and whether it would be helpful to conduct a regional economic analysis of potential shifts in shipping patterns. Participants had the following responses:

- *Identify environmental implications of different routing scenarios* – Since shipping routes are based on shortest distance and lowest cost, participants said it would be useful to identify how much additional fuel would be consumed and how much more exhaust would be emitted if traditional shipping routes are rerouted.
- *Identify economic implications of different future scenarios* – Some participants said economic analysis of future scenarios would only be useful to the extent that it would help their port become more competitive. In this sense, a localized, port-specific economic impact analysis—within a regional context—would be more useful than a broad, New England-wide economic impact analysis. However, other participants, particularly those from smaller ports such as those in Connecticut, suggested that greater coordination between the ports in New England and adoption of a more regional economic approach could help each port better serve a specific niche market, thereby enhancing the development opportunities of all ports simultaneously. This might be especially true if Post-Panamax vessels visit New England ports. At the state level, the Massachusetts Port Compact is currently undertaking a similar process whereby state ports are developing a strategic plan to match businesses to each port in the set. Finally, some participants thought it would be useful to identify the economic impacts that could occur if new routing scenarios alter vessel destinations.
- *Identify the potential landside infrastructure impacts could also be useful* – Some working session participants suggested that if rerouting shipping lanes increases the cost of shipping, then businesses would choose to ship products overland rather than via ocean vessels, which could cause increased congestion on the land-based shipping routes. Participants suggested investigating how the rerouting of shipping lanes might impact the overland shipping routes.

4. Interactions with Other Ocean Activities and Marine Resources

The stakeholder interviews conducted before the working sessions identified many concerns about

potential new offshore development and air emissions regulations, and ongoing concerns about marine mammals. To further understand if there was a role for regional ocean planning to help address these concerns, participants were asked what interactions with other ocean uses and ocean resources regional ocean planning ought to consider. Participants from several working sessions suggested the following topics for further focus:

- *Conflicting federal mandates and timelines* – Some participants pointed out a potential disconnect between the project timelines associated with competing mandates of the Bureau of Ocean Energy Management (BOEM) and the National Ocean Policy of 2010 and expressed concern that BOEM may end up siting offshore wind energy projects before the New England Regional Planning Body completes its ocean planning process. These participants expressed concerns that BOEM energy infrastructure siting would potentially conflict with the shortest distance and least cost pathways already in use by many vessels. As an example, participants said offshore wind siting could potentially redirect shipping routes away from ports, which could decrease the vessel traffic at a port. Others pointed out potential safety issues with forcing vessels further offshore. In general, participants saw regional ocean planning as playing a potentially helpful role in helping to address or reduce these types of ocean use conflicts.
- *Other potential conflicts with offshore energy development* – Participants said the size of turbines and the distance between offshore wind turbines could potentially interfere with the radar systems used by vessels. Additionally, fishing vessels fishing in and around turbines might be essentially invisible to other vessels, which could cause a hazard when they emerge from the interference zone into established vessel traffic pathways.

Several participants described the need to maintain and possibly expand the amount of safe anchorage areas, especially if anchorage areas are reduced by offshore energy development or the expansion of Right whale protection areas. Depending on the locations of offshore energy development and associated electricity transmission cables, issues could arise during dredging operations or anchoring. In some locations, for example southeast of the Port of Portsmouth, vessels already anchor in uncharted areas to avoid old cables stretched from coast guard station to the isle of shoals.

- *Marine mammal and vessel interactions* – Although participants said ship captains frequently inquire about the existing 10-knot speed restriction resulting from North Atlantic Right whale observations, they believed that, in general, captains are aware of the regulation, understand it and adhere to it. To avoid the Right whale restriction zone entirely while traveling to the Port of Portland, some tanker vessels bypass the Boston traffic lane by traveling east of George's Bank. Participants said some captains of diesel powered vessels avoid marine mammal areas to prevent the mechanical wear and tear of operating at slow speeds.

Many participants said industry would like to move from a primarily seasonally-based marine mammal management protocol to a dynamic management protocol because they believe it would be more effective and less costly to the industry. Some participants said the current management system of dynamic and seasonal management is not practical because the dynamic management areas, where an animal is known to be present, only require a voluntary speed restriction, while the speed restriction is mandatory in seasonal management areas, but animals may or may not be present. They said that if Right whales are present, the speed restriction should be mandatory, and they would prefer to eliminate seasonal management. Some participants were also concerned that shipping could be impacted by the expansion of seasonal or dynamic management areas.

- *Emissions control areas* – Currently, some shipping companies are able to pass emissions control costs onto their customers. However, participants said the cost increase associated with complying with new Environmental Protection Agency (EPA) emissions regulations could eventually shift a company from profit to loss, since the profit margin is so narrow in the shipping sector, and would disproportionately impact shipping companies operating between North American ports and largely within the US Exclusive Economic Zone where the controls would be enforced. By 2015, when the new regulations are scheduled to be enforced, some shipping representatives believed the additional emissions cost could be so great that their customers would choose other means of shipping goods. Additionally, fleet owners fear that once they upgrade the ship engines to comply with a new standard, another more stringent standard will be imposed. This causes them to reluctantly comply with regulations until they are assured the regulations will not change for several years. Likewise, the cruise line industry is reluctant to switch to low sulfur fuel engines because of the high expense per vessel and the additional expense of low sulfur fuel. If unable to comply with the emissions regulations, they could potentially stop serving US ports. Alternatively, they might pass the cost on to their passengers, since the US is one of the cruise industry's largest markets. Another possibility is that cruise ships could reduce the number of ports they visit and strategically utilize only one port, which would allow them to spend less time in the US Exclusive Economic Zone (EEZ) where the regulations are enforced.
- *Dredging and disposal challenges* – Participants in several of the working sessions believed that enhanced regional coordination would be useful to help align funding cycles and dredging windows, which are typically based on spawning seasons of certain fish species. Participants believed this would improve dredging efficiency.

Although securing funding for dredging operations is a common challenge for ports, some dredging projects face additional challenges based on the amount of material to be dredged, the concentration of contamination found in the material, and finding sites for disposing the dredge materials. If a disposal site for the material is not secured, ports might not be able to dredge, which would reduce the size of vessels able to enter the port. Another frequent issue associated with disposal of contaminated dredging materials is how to cap the material to ensure it does not migrate.

One potential solution mentioned by participants would be to reopen some historic dredge-disposal sites. For example, the main channel of Portland Harbor might be dredged in 2015, and the Port of Portland would like to simultaneously dredge between the docks, but lacks a disposal site. As a result, the Port is considering reopening a disposal site located off of Cape Elizabeth.

Finally, participants in the Boston and New Haven working sessions pointed out the potential conflicts that exist between dredging and the existence of underwater cables and other infrastructure. The existence of these cables precludes dredging in some areas. This issue is especially a concern in the Port of Boston and Long Island Sound.

- *Aquaculture* – Participants suggested aquaculture projects undergo spatial planning similar to wind energy development and that aquaculture regulations be established. To avoid potential conflicts, participants suggested aquaculture projects be permitted in areas where ships do not typically navigate.
- *The commercial fishing industry* – Participants said the commercial fishing industry already believes their fishing grounds have constricted, so any proposed offshore activities that might

impact fishing opportunities are likely to be met with opposition.

Working session-specific responses

The following responses were given primarily at the working session identified:

In Boston, participants said that research vessels should also be included in ocean planning to avoid disrupting ongoing investigations by research organizations. This was a particular concern of the Port of Gloucester.

In North Kingston, RI, participants said some members of the recreational and professional boating community equate dredging with increased traffic, which can cause opposition to dredging.

In New Haven, participants mentioned a specific conflict between the states of Connecticut and New York over plans to close a dredge disposal site in Long Island Sound. Connecticut ports are concerned about the lack of dredge disposal alternatives.

In Portland, ME, participants said that the Maine Coastal Planning Office is undertaking a comprehensive AIS data investigation on the Gulf of Maine in coordination with the Department of Marine Resources. The two-year project will relate AIS data to Right Whale observations and ocean planning. They also said the Maine Coastal Planning Office is working with the Maine Department of Environmental Protection to identify and map historic dredge material disposal areas. And they noted that during dredging, fishing and lobster fleets are likely to be impacted since the lobster and fishing fleets dock at piers on Portland Harbor.

In Portsmouth, NH, participants mentioned potential conflicts between the siting of aquaculture projects, which can involve permits for anchored structures, and maintenance of shipping lanes. They also described their own site-specific challenges with dredge material disposal. Although dredge materials from Portsmouth and the Piscataqua River are clean and can typically be used for beach nourishment, this likely won't be the case with the material dredged for a planned turning basin expansion project because people perceive the sediment to be contaminated. A potential disposal site was identified in federal waters Northeast of the Isle of Shoals and southeast of Boon Island, Maine. Alternately, the Cape Arundel disposal site in southern Maine may reopen, but there may be disposal restrictions based, in part, on the remaining capacity of the site. Acquiring the funds for dredging the turning basin is challenging because of the need for a cost share agreement between the US Army Corps of Engineers and the State of New Hampshire.

5. Maritime Commerce Sector Data

NROC is compiling data from agencies, industry representatives, and other organizations to create data products for the Northeast Ocean Data Portal², which will serve to document and characterize ocean use and resources off the coast of New England. Data priorities focus on four key areas: ocean use data, administrative and cultural areas data, habitat data, and physical and oceanographic data. Related to the maritime commerce sector, NROC has mapped critical navigation and operational areas, potential hazards affecting maritime operations, and commercial vessel traffic using AIS, NOAA nautical charts,

² www.NortheastOceanData.org

and other data sources.

5.1. Improving Utility of the Data Portal for Maritime Commerce Sector

After viewing several AIS data maps, working session participants were asked several questions about how the Data Portal could be most useful for the maritime commerce sector and for regional ocean planning.

Participants agreed that products breaking down AIS by vessel type would be beneficial as this would show the different patterns associated with different types of vessels and cargoes. For example, it would highlight the near-shore routes used by tug and tow traffic, the specific routes of passenger vessels, and the greater use of offshore areas and the shipping lanes by tankers and cargo vessels. These specific patterns could become important as shifts in the industry occur (for example, if short sea shipping increases, near shore routes might become more highly utilized). Some participants also recommended that AIS data be sorted by vessel size, such as less than 35 feet, 35-45 feet, and greater than 45 feet.

When asked whether it would make sense to look at data across years and seasons to discern trends participants emphatically stated that this analysis would be useful. Yearly economic fluctuations influence the amount and type of vessel traffic. The expansion of the Panama Canal could result in significant changes in vessel traffic patterns, which would need to be captured in a spatial data product for use in regional ocean planning. Seasonal patterns in certain types of maritime commerce are influenced by product, environmental factors, or by vessel purpose. Data analysis by year might show that cruise industry operations slowed down during the economic downturn. Cruise industry data by season will show, for example, that ships come to the Port of Portland during two summer months almost exclusively. Fishing vessel traffic may also fluctuate seasonally.

Participants also said AIS data could also be used to analyze cruise ship data between New York and the Port of Portland. Since the cruise industry plans their routes approximately three years in advance, the impacts of proposed short sea shipping lanes on the cruise line industry could be analyzed by identifying how customary traffic patterns compare to the proposed short sea shipping lanes.

Participants made specific suggestions of additional data that could be included in the portal. Key suggestions included:

- *Pilot boarding areas* – These areas are often identified on the nautical charts. Those that are not on the nautical charts are generally announced in the United States Coast Pilot. If a pilot boarding area goes unlisted in the Coast Pilot, a pilot association will often contact NOAA to get it listed.
- *Unofficial routes preferred during inclement weather* – It would be helpful to include unofficial traffic separation schemes similar to the one located off the coast of Cutler, Maine, which is used by tanker vessels during bad weather.
- *Anchorage areas* –NROC should talk with local Coast Guard command and piloting associations to obtain traditional knowledge of uncharted anchorage areas. It would also be helpful to include anchorages only utilized in foul weather. There is a large uncharted anchorage area off the coast of New York, for example.
- *Safety and Security zones* – Document as many safety and security zones as possible, but should

clearly acknowledge that some are only temporary security zones used occasionally or on a yearly basis. NROC could locate additional safety and security zones in the Code of Federal Regulations and could perhaps create a marine events listing to inform people when and how often certain safety and security zones are in effect.

- *Hazardous Areas* – Participants suggested mapping hazardous areas including areas of unexploded ordinance or shipwrecks with contamination issues.
- *Appropriate dredging disposal sites* – Participants recommended creating maps detailing ocean sites that are appropriate for disposal of dredging material.
- *Aquaculture Maps* – Create maps illustrating where aquaculture projects should and should not be located based on maritime traffic patterns.
- *Five dimensions to consider for data collection* – It may be useful to consider the following five dimensions of marine ocean activities when portraying ocean data: activities on the bottom of the ocean, in the water column, on the surface of the water, or in the air above the water. Additionally, these activities have a temporal component.
- *Other potential areas* – Participants also suggested that the following be documented: artificial reefs, recommended routing areas, traditional use areas formerly captured in USCG Water Analysis and Management System (WAMS), and lightering areas where ships typically lighten loads to increase draft before moving into a port.

5.2. Addressing Limitations of AIS Data

Participants then discussed some potential limitations with AIS data and offered suggestions for overcoming them, as follows:

- *Data reliability* - There is a sufficient quantity of AIS data from 2009 until present to identify trends in vessel traffic, but AIS data has some drawbacks. It is suspected that some vessels may be turning off their AIS devices when they pass through sensitive ecological areas. There have also been cases where vessels have incorrectly (though not purposefully) set the parameters of their AIS systems, thus causing the vessel type to be misidentified. Additionally, the AIS data collection system can be interrupted by severe weather conditions, which may result in several consecutive days without data, and AIS data is only available up to approximately 35 miles from the coastline. To enhance the AIS dataset, Vessel Monitoring System (VMS) data, AISB and AISC data could also be analyzed, and additional data could be requested from tug companies and shipping lines. AIS Live may also have too much data to be useful for the Data Portal.
- *Context* - To accurately interpret AIS data, it is critical to understand when the data was collected. Providing context with the data is important to understand the conditions driving vessel traffic. For example, a mild winter will reduce the quantity of shipments of winter weather goods like road salt or heating oil, or the cruise industry primarily operates during two summer months and not at all during the winter.
- *Gaps* – AIS reporting is not mandatory for all vessels. Small passenger boats engaged in multiple industries may not be captured. Some vessels offering fishing services and whale watching tours make multiple trips per day, but not all are required to report trip data. And AIS data cannot describe the type of fishery the fishing vessel is frequenting.

APPENDIX 1: Working Session Participants

December 10 – New Haven, CT

Amy Beach, US Coast Guard, Connecticut
Charles Beck, Connecticut Department of Transportation
Emile Benard, US Coast Guard contractor
David Blatt, Office of Long Island Sound/Connecticut Coastal Program
Michele DesAutels, US Coast Guard
Martha Klimas, Bridgeport Port Authority
Capt. Andrew McGovern, Sandy Hook Pilots Association
Nick Napoli, Northeast Regional Ocean Council
Eric Poncelet, Kearns & West (facilitator)
Brent Pounds, National Ocean and Atmospheric Administration
Eric Roberts, Consensus Building Institute (facilitator)
Judy Shieffele, Port of New Haven

December 11 – Boston, MA

Gail Avery, Seafarer's Friend
Ron Beck, US Coast Guard
Bruce Carlisle, Massachusetts Coastal Zone Management
Sara Cohen, Consensus Building Institute (facilitator)
Stewart Dalzell, Massachusetts Port Authority
Michele DesAutels, US Coast Guard
Brian Downey, CSL International
Bill Eldridge, Peabody and Lane, Mediterranean Shipping
Sarah Garcia, Port of Gloucester
Deborah Hadden, Massachusetts Port Authority
Hauke Kite-Powell, Woods Hole Oceanic Institute
Martin McCabe, Boston Harbor Pilots
Nick Napoli, Northeast Regional Ocean Council
Eric Poncelet, Kearns & West (facilitator)
Brent Pounds, National Ocean and Atmospheric Administration
Brad Washburn, Massachusetts Coastal Zone Management
Brad Wellock, Massachusetts Port Authority
LCDR Scott White, US Coast Guard

December 12 – Portland, ME

Kathy Alves, City of Portland, Maine
Patrick Arnold, Maine Port Authority
Emile Benard, US Coast Guard Contractor
Loring Carpenter, Seafarer's Friend
Hauke Kite-Powell, Woods Hole Oceanographic Institute
Robert Leeman, Port of Portland, Maine
John Mauro, US Coast Guard
Matthew Nixon, Maine State Planning Office/Maine Coastal Program

Summary - NROC Maritime Commerce Sector Working Sessions, December 2012

Eric Poncelet, Kearns & West (facilitator)
Eric Roberts, Consensus Building Institute (facilitator)
Thomas Valleau, North Atlantic Ports Association, Inc.
John Weber, Northeast Regional Ocean Council

December 13 – Portsmouth, NH

Emile Benard, US Coast Guard
Noah Elwood, Appledore Marine/Propeller Club
Nash Garabedian, Seafarer's Friend
Richard Holt, Jr., Portsmouth Pilots/Moran Towing
John Mauro, US Coast Guard North Atlantic
Betsy Nicholson, National Ocean and Atmospheric Administration
Eric Poncelet, Kearns & West (facilitator)
Eric Roberts, Consensus Building Institute (facilitator)
Tracy Shattuck, New Hampshire Division of Ports and Harbors
Geno Marconi, Director, New Hampshire Port Authority
John Weber, Northeast Regional Ocean Council
Chris Williams, New Hampshire Coastal Program

December 14 – North Kingstown, RI

Emile Benard, US Coast Guard contractor
Ames Colt, Rhode Island Department of Environmental Services
Paul Costabile, Northeast Marine Pilots, Inc.
Ona Ferguson, Consensus Building Institute (facilitator)
Grover Fugate, Rhode Island Coastal Resources Management Council
Hauke Kite-Powell, Woods Hole Oceanic Institute
Edward LeBlanc, US Coast Guard, Southeastern New England Sector
Daniel Martin, National Ocean and Atmospheric Administration Coastal Services Center
Evan Matthews, Quonset Development Corporation
Nick Napoli, Northeast Regional Ocean Council
Eric Poncelet, Kearns & West (facilitator)
Brent Pounds, National Ocean and Atmospheric Administration

APPENDIX 2: Working Session Agenda

AGENDA

MARITIME COMMERCE SECTOR WORKING SESSIONS

Northeast Regional Ocean Council (NROC) Sector Outreach

- December 10, 2012 (New Haven City Hall, 165 Church St, Meeting Room 1, New Haven, CT)
- December 11, 2012 (Black Falcon Cruise Terminal, 88 Black Falcon Ave, Mezzanine Level, Boston, MA)
- December 12, 2012 (Gulf of Maine Research Institute, 350 Commercial St, TD Bank Boardroom, Portland, ME)
- December 13, 2012 (Portsmouth Port Authority, 555 Market St, Meeting Room, Portsmouth, NH)
- December 14, 2012 (Quonset Development Corporation Annex Building, 95 Cripe St, North Kingstown, RI)

WORKING SESSION OBJECTIVES

- Provide an update on recent regional ocean planning efforts.
- Increase clarity and understanding around key issues facing the maritime commerce sector.
- Explore the role that regional ocean planning can play in addressing these issues, and identify specific next steps to doing so.
- Discuss the current status of data characterizing maritime commerce in New England, and explore the role that regional ocean planning can play in improving and expanding this information base.

AGENDA

Time	Topic
9:30	Arrivals
10:00	Welcome <ul style="list-style-type: none">• Welcome, introductions, and an overview of the day's agenda – John Weber or Nick Napoli, Northeast Regional Ocean Council (NROC)
10:15	Update on ocean planning efforts <ul style="list-style-type: none">• Introduction to the Northeast Regional Ocean Council and Regional Ocean Planning – Nick Napoli or John Weber, NROC
10:30	Discussion of key sector issues and trends within an ocean planning context Issue #1: Understanding potential changes to ports and shipping

Summary - NROC Maritime Commerce Sector Working Sessions, December 2012

	<p>Brief updates on federal initiatives:</p> <ul style="list-style-type: none"> ○ America's Marine Highway – Jeff Flumignan, US Department of Transportation Maritime Administration ○ Atlantic Coast Port Access Route Study (ACPARS) – Emile Benard, US Coast Guard <ul style="list-style-type: none"> • Discussion: <ul style="list-style-type: none"> ○ Is there a need to further understand future changes for ports and shipping from a regional ocean planning perspective?
12:15	Lunch (provided)
1:15	<p>Continue discussion of key sector issues and trends within an ocean planning context</p> <p>Issue #2: Interactions with other ocean activities and marine resources</p> <ul style="list-style-type: none"> • Discussion: <ul style="list-style-type: none"> ○ What interactions with other ocean uses and ocean resources does ocean planning have to consider?
2:00	Break
2:10	<p>Discussion of maritime commerce sector data</p> <ul style="list-style-type: none"> • Brief overview on status of data about the maritime commerce sector – Nick Napoli/John Weber, NROC • Discussion: <ul style="list-style-type: none"> ○ Using the AIS data to characterize shipping. ○ Documenting important transportation and operation areas.
3:20	Recap and next steps
3:30	Adjourn